

Information Searching Activities Using the ICT among the Secondary School Students

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Abstract

This article reports on a study carried out to determine ICT use and information searching activities among the secondary school students. This study provides an understanding on how the secondary school students used the ICT for various purposes including information seeking activities. There were 920 secondary school students nationwide whose schools were randomly selected involved in this study. A questionnaire was used to determine their demographic background, information sources preference and other ICT-related aspects. Among the findings were that students preferred to use non-digital sources of information and Internet surfing was the most popular activity. The students were also not very competent in using the ICT. It was recommended that more efforts to be done to ensure that students use ICT frequently that focused more on the information seeking activities to develop their information literacy skills.

Keywords: *ICT use, ICT skills, information literacy skills, secondary school students*

1. Introduction

The American Library Association (1989) identifies four types of ability in order to be considered as information literate. These abilities are recognizing the need for information, locating the needed information, evaluating the acquired information and using the selected information. In locating the needed information, a variety of information sources have to be considered to obtain the most relevant information that can fulfill information needs. The advancement of information and communication technology (ICT) has made digital information to be an important source of information. This is because almost all kinds of information can be found digitally from various resources especially the Internet.

It is therefore important for students to use the ICT for information searching activities. In this respect, there are two questions that need to be answered to ensure that students are able to fulfill their information needs when using the ICT. Firstly, how competent the students are in using the ICT and secondly, how far the students use the ICT for information searching purposes. This is because students need to have the required skills in ICT to enable them to obtain the needed information effectively and efficiently. Besides, there are many other purposes for using the ICT that are not related to information seeking. All these could be a hindrance for students to become information literate.

This study attempted to determine the extent of use of the ICT by the students. It was assumed that students most students were able to get the access and use the ICT at least at their schools. A better understanding was hoped to be gained in terms of how far the students really used the ICT for

information seeking purposes and other educational-related activities. This was important because ICT enabled the students to develop their information literacy skills if they used it accordingly.

2. Literature Review

The ICT has actually become the primary source in information searching according to Catts and Lau (2008). This means that students have no choice but to embrace the ICT to enable them to become information literate. They must really know how to use the ICT to enable them to find and access information. Catts and Lau also stressed that information literacy and ICT were difficult to separate. It can be implied that the ICT has become a vital tool in information seeking activities.

An obvious advantage of using the ICT for information seeking purposes is its aspects of effectiveness and efficiency. Becoming information literate does not only mean having the abilities to recognize, locate, evaluate and use information (American Library Association, 1989) it also requires students to become effective and efficient users of information as stated in the The Information Literacy Competency Standards for Higher Education (2000) outlined by the Association of College and Research Libraries (ACRL). Locating information using the ICT enables students to become effective and efficient because the information is readily available to be accessed anytime and less time is taken compared to locating the printed sources. This is provided that the students have considerable abilities in using the ICT.

Although Catts and Lau (2008) stated that ICT and information literacy were inseparable and inter-related (Zuke, 2005), there is actually a distinction between the two as far as the skills are concerned. Information literacy has its particular set of skills which was mentioned earlier, and ICT has its own set of skills. According to Zuke, ICT skills were related to the abilities to use computers, software applications and other technologies. The main difference between the two is that the former requires cognitive abilities while the latter is more on technical abilities. It can be implied that a person who is expert in using the ICT does not necessarily mean that he or she is information literate. Like the ICT skills, information literacy skills can also be acquired through learning (Lau, 2006). In short, while information literacy and ICT are strongly connected, both have their own set of skills that need to be learned and acquired for the purpose of becoming information literate.

Becoming aware of the various types of information sources available is the initial step to become effective and efficient information users. Students should know when it is appropriate to use the printed sources and when to access the ICT for information seeking. This is because sometimes using the printed sources is more efficient than using the electronic sources. It cannot be denied that the digital formats have become the more preferred information sources especially by teenagers compared to any other type of sources. Underwood, Dillon and Twining (2007) found that nearly 90% of the students in their survey use the ICT for information searching. However, Jorosi and Isaac (2005) found that students' main source of information was their textbooks.

In short, ICT plays an important role in the process of developing students' information literacy skills. It enables the information seeking activities to become effective and efficient. Although students need to find information from various sources, the digital-based information should be their main source considering that almost all types of information are available electronically especially using the Internet. However, students must first have the considerable skills in ICT to enable them developing their information literacy skills.

3. Methodology

The data for this study were collected using a survey questionnaire. The questionnaire consisted of students' demographic background, views on the importance of ICT, access to information sources, access to ICT, frequency of using the ICT and skills in using ICT-related activities. The questionnaire

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was constructed by the researcher based on adoption and adaptation from OECD (2005a), OECD (2005b) and UNESCO (2006).

Eighty schools from all over the country were randomly selected based on urban and rural categories. Fifteen sets of questionnaire are sent to each school and altogether there are 1200 sets of questionnaire to be answered by the student respondents. A response rate of 76.7% is obtained based on 920 of them are sent back to the researcher.

4. Results and Data Analysis

The study found that a majority of the student respondents were from rural schools comprised 55% (510) compared to 45% (410) students from urban schools. In terms of gender, there were more girls who participated in this study. The girls comprised 56% (519) compared to 44% (401) boys. Further analysis was also made to find out the number of students according to their form levels. The findings showed that 57% (548) of them were from the lower secondary level (aged 13 to 15 years) and 43% (372) from the upper secondary level (aged 16 and 17 years). With the high number of respondents involved in this study, generalizations can be made about the secondary school students in the country especially those who are from the government national secondary schools.

Next, the respondents were asked to reveal the frequency of assessing the sources of information. To get a better understanding, the non-digital sources were also listed in the questionnaire for comparison purposes. There were thirteen types of information sources that the students need to respond and divided into four main sources namely, digital sources, printed sources, people as a source and other sources. Analyses were made based on the mean result for each source. Table 1 presents the findings for the question. For the digital sources, it was discovered that digital information stored in the DVD/CD-ROM was the least used by the students among all the thirteen sources (mean=1.42). The Internet was not also among the most preferred information sources (mean=1.99). The study found that the school text books (mean=3.21) and reference books (mean=3.01) were the two most frequently used by the students for information seeking purposes. For the people as a source, the students preferred to ask information from their friends (mean=2.96) which was the third most preferred source. Their teacher librarians (mean=1.56) were the fourth least preferred by the students to ask for information. From these findings, it can be said that ICT was not highly relied on by the students when it came to information seeking. They still heavily relied on their school text books and reference books to fulfill their information needs. Also, teacher librarians who were supposed to be reliable information providers were found to be among the least preferred by the students. It can be implied that students were more convenient to use the printed sources than ICT to find information.

Table 1: Frequency of Access to Information Sources

Source Types		N	Min.	Max.	Mean	Std.
Digital sources	Internet	918	0	4	1.99	1.207
	DVD / CD-ROM	917	0	4	1.42	1.153
Printed sources	School text books	918	0	4	3.21	0.992
	Reference books	917	0	4	3.01	0.991
	Newspapers	917	0	4	2.21	1.077
	Encyclopedia	916	0	4	1.45	1.117
	Magazines	916	0	4	1.83	1.020
People as a source	Teacher librarian	915	0	4	1.56	1.125
	Teachers	917	0	4	2.68	1.034
	Friends	917	0	4	2.96	0.991
	Family members	917	0	4	2.65	1.147

Other people	915	0	4	1.62	1.041
Other sources	916	0	4	1.43	1.118

Note: The scales used are: 0- Never, 1 – Rarely, 2 – Some of the time, 3 – Most of the time, 4 – All the time

The study also investigated the frequency of ICT-related activities that the students performed. There are thirteen types of activity listed in the questionnaire. Based on Table 2, the top three ICT-related activities were surfing the Internet (mean=2.73), performing word processing (mean=2.49) and understanding learning materials (mean=2.33). Downloading softwares (mean=1.81), programming (mean=1.71) and using the Internet to communicate and discuss with friends (mean=1.66) were the three least performed activities. These were consistent with the previous findings as shown in Table 1 that students did not use the ICT frequently and it can be said that Internet surfing was the most reason for assessing the ICT. It was also encouraging to find that the next two activities after Internet surfing were for educational-related purposes although playing games (mean=2.29) was the fourth most popular activity.

Table 2: Frequency of Use for ICT-Related Activities

Activity	N	Min.	Max.	Mean	Std. Deviation
the computer for Internet surfing	912	0	4	2.73	1.270
word processing such as Microsoft Word	911	0	4	2.49	1.318
the computer for assisting you to understand learning materials	908	0	4	2.33	1.393
the computer for playing games	912	0	4	2.29	1.411
the computer to use graphics programming for drawing and painting	911	0	4	2.13	1.199
DVD or CD-ROMs	911	0	4	2.01	1.299
the computer for electronic communication such as e-mailing and chatting	911	0	4	2.00	1.308
spreadsheets such as Microsoft Excel	911	0	4	1.87	1.125
the Internet for downloading songs	911	0	4	1.86	1.332
the Internet for downloading softwares (including gaming softwares)	910	0	4	1.81	1.197
the computer for programming	910	0	4	1.71	1.131
the Internet for communicating and discussing with friends	911	0	4	1.66	1.201

Note: The scales used are: 0- NA/Never, 1 – Less than once a month, 2 – Between once a week and once a month, 3 – A few times a week, 4 – Almost everyday

In terms of ICT skills, there were seven related activities provided in the questionnaire. The activities were considered basic requirements for students to know. It was because most schools were already equipped with computer laboratories that they were supposed to be taught computer lessons. Table 3 reveals that using Microsoft Word (mean=2.4) was the most type of skill that the students could perform among all. This was followed by the ability to surf the Internet (mean=2.23) and using the search engines (mean=2.03). The third and fourth types of skills that the students were able to do were using Microsoft PowerPoint (mean=1.98) and Microsoft Excel (mean=1.91). The activities that they could perform the least were e-mailing (mean=1.73) and transferring files from the Internet (mean=1.60). It can be concluded that most students were still not competent in performing all the basic ICT-related activities. Most of them admitted that they needed help to carry out the activities. It was also interesting to know that most students did not know how to transfer files from the Internet although Internet surfing was the

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most popular activity among them. It can be implied that students used the Internet for browsing purposes only.

Table 3: Self-evaluation ICT Skills

	N	Min.	Max.	Mean	Std. Deviation
Using Microsoft Word	914	0	3	2.40	0.893
Surfing the Internet	914	0	3	2.23	0.825
Using search engines like Google and Yahoo	913	0	3	2.03	1.049
Using Microsoft PowerPoint	914	0	3	1.98	1.015
Using Microsoft Excel	914	0	3	1.91	0.956
Writing and sending e-mails	914	0	3	1.73	0.943
Copying or downloading files from the Internet	913	0	3	1.60	0.988

Note: The scales used are: 0 – Not Applicable/I don't know what this means, 1 – I know what this means but I cannot do it, 2 – I can do this with help from someone, 3 – I can do this very well by myself

5. Conclusions

This study surveyed 920 student respondents regarding their information seeking activities and ICT use. The students comprised both gender and all the five form classes (from Form One to Form Five) from rural and urban areas throughout the country. The aspects surveyed are:

- i. Students' frequency of access to sources of information
- ii. Frequency of using ICT-related activities
- iii. Students' ICT skills

There are conclusions that can be generalized about the secondary school students in the country based on the findings of this study. It can be generalized that digital information is not the main source of information for the students. It was discovered that the students still relied heavily on their text books and reference books to find information. Furthermore, the study concludes that students did not use the ICT frequently and Internet surfing was the main reason when they used the ICT. Other popular reasons were for word processing, understanding learning materials and playing games.

It can also be generalized that students do not use the ICT frequently. This is based on the findings from the survey to determine their places of access and types of ICT-related activities they carry out. This could be a discouraging factor because most of them have the ICT access at home and they also have the opportunity to use it at schools or other places. It could be beneficial to carry out further studies why students are reluctant to use the ICT especially those with the home access and how to encourage them to use it. This is because a study by Trucano (2005) concludes that a frequent use of ICT at home also leads to a frequent use at school.

Another conclusion that can be made was students were not competent in their use of ICT. This may be the reasons why ICT use among the students in the country was not satisfactory although they had the access. Therefore, more efforts need to be done to enhance the students' ICT skills.

In retrospect, the findings of this descriptive study have provided some empirical evidences on the current situation of the use of ICT among the students in the country. It is important to get an in-depth

understanding of how ICT has affected the students because ICT has become an integral part in the process of developing information literacy skills. The ICT has become a vital aspect in information literacy because almost all kinds of information can be acquired digitally. It is difficult to acquire the digital information without proper knowledge and abilities in using the ICT. Thus, it is important for students to be competent in using the ICT for them to fulfill their information needs. They need to fully utilize the ICT to be able to develop their information literacy skills. It is because acquiring digital information requires them to practice how to find, use and evaluate information to ensure that they have found only the right and relevant information. This will enable students to become competent information users in the process of becoming lifelong learners.

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